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CLAIMS

[Claim(s)]

[Claim 1]The axis of rotation (4) which has an eccentric body (3) is established in a container (1) having a magnetic fluid (2), enabling free rotation, A rotation viscous damper constituting so that said magnetic fluid (2) may be made to magnetize from the outside of a specific position (3a) of said container (1) and only a specific angle-of-rotation portion of said axis of rotation (4) may attenuate rotation rather than other angle-of-rotation portions.

[Claim 2]The rotation viscous damper according to claim 1, wherein said eccentric body (3) consists of a rotating piston provided by carrying out eccentricity to said axis of rotation (4).

[Claim 3]The rotation viscous damper according to claim 1 or 2, wherein a wheel (21) is provided in said axis of rotation (4) via an arm (20).

[Translation done.]

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application]This invention relates to a new improvement only for the specific angle-of-rotation portion of the axis of rotation to attenuate rotation rather than other angle-of-rotation portions especially about a rotation viscous damper.

[0002]

[Description of the Prior Art]Conventionally, as this used kind of a rotation viscous damper, what is shown in drawing 3 was adopted, for example. That is, it is a cylinder as a container which is shown with the numerals 1 in drawing 3, and the magnetic fluid 2 is enclosed with the inside of this cylinder 1. The rod 4 provided in the magnet 3 of the shape of a piston established in this cylinder 1 enabling rotation and free axial movement penetrates the breakthrough 5 formed in the upper bed of this cylinder 1, and is drawn outside.

[0003]Next, operation is described. In the state of drawing 3, the magnetic fluid 2 enclosed in the cylinder 1 is magnetized with said magnet 3, and when external force acts via the rod 4 from the exterior, it decreases this external force by the flow resistance of this magnetized magnetic fluid.

[0004]

[Problem(s) to be Solved by the Invention]Since the conventional buffer was constituted as mentioned above, the following technical problems existed. That is, although it was effective to the magnetic both-way direction, a large braking effort could not be acquired to the hand of cut, but it was buffer operation of only shaft orientations actually. Therefore, it was impossible to have accepted the demand of buffer operation of a hand of cut.

[0005]This invention was made in order to solve the above technical problems, and an object of this invention is only the specific angle-of-rotation portion of the axis of rotation to provide the rotation viscous damper it was made to attenuate rotation rather than other angle-of-rotation portions especially.

[0006]

[Means for Solving the Problem]A rotation viscous damper by this invention is the composition of establishing the axis of rotation which has an eccentric body in a container having a magnetic fluid, enabling free rotation, making said magnetic fluid magnetizing from the outside of a specific position of said container, and having made it only a specific angle-of-rotation portion of said axis of rotation attenuate rotation rather than other angle-of-rotation portions.

[0007]More particularly, said eccentric body is composition which consists of a rotating piston provided by carrying out eccentricity to said axis of rotation.

[0008]More particularly, it is the composition that a wheel is provided in said axis of rotation via an arm.

[0009]

[Function]In the rotation viscous damper by this invention, the eccentric body is provided in the axis of rotation, and. In order only for the specific angle-of-rotation portion to make the magnetic fluid magnetize from the outside of the specific position of a container, The viscosity of the magnetic fluid of this angle-of-rotation portion is higher than other angle-of-rotation portions, rather than the angle portion of others [portion / this / angle-of-rotation], rotation of an eccentric body, i.e., the axis of rotation, can decline, and dumping of the axis of rotation of a hand of cut can be obtained.

[0010]

[Example]Hereafter, the suitable example of the rotation viscous damper by this invention is described in detail with a drawing. A portion the same as that of a conventional example or equivalent is explained using identical codes. What is shown with the numerals 1 in drawing 1 is a container which consists of cylinders, the magnetic fluid 2 is enclosed in this container 1, and the eccentric body 3 which has the axis of rotation 4 like drawing 3 is installed in this container 1.

[0011]This eccentric body 3 is constituted by disc-like, eccentricity of it is carried out to the axis of rotation 4, and it is provided, and although a rotating piston or disc-like are preferred, it can also constitute from a corner guard object etc., for example, without restricting to disc-like.

[0012]In the outside of said container 1, the magnetizing means 10 which becomes the outside of only the specific position 3a on the circumference of this container 1 from a permanent magnet or an electromagnet is formed, and the specific position 3a close part of the magnetic fluid 2 in this container 1 is magnetized on it, and it is constituted so that the viscous force only near [that] the portion may be heightened.

[0013]Therefore, in the composition of above-mentioned drawing 1, since it has viscosity only whose specific angle-of-rotation portion corresponding to this specific position 3a is higher than other angle-of-rotation portions if an arrow

direction is made to rotate the axis of rotation 4, in this portion, rotation of the eccentric body 3 4, i.e., the axis of rotation, declines. Attenuation of the shaft orientations of the axis of rotation 4 can be obtained as usual.

[0014]As shown in drawing 2, it is also applicable as a suspension device of a vehicle by attaching the wheel 21 to the axis of rotation 4 of the rotation viscous damper 50 shown by drawing 1 via the arm 20, and constituting so that this arm 20 may be hung to the main part 23 side with the spring 22. For example, by guide rail 30 grade, fix the magnetizing means 10 in this case to the arbitrary positions of the periphery of a cylinder, and a magnet, By controlling the magnetizing current other than a permanent magnet as electromagnetic, it can also constitute so that the state and position of attenuation of the viscous force of the magnetic fluid 2 and the axis of rotation 4 may be changed arbitrarily. Although not illustrated, when the axis of rotation 4 is made to connect with the agonist in a robot etc., the attenuation in shaft orientations and a hand of cut can be obtained.

[0015]

[Effect of the Invention]Since the rotation viscous damper by this invention is constituted as mentioned above, it can acquire the following effects. Namely, make some magnetic fluids magnetize from the outside, and control the viscosity, and. By having provided the eccentric body in the axis of rotation, attenuation [/ only near / arbitrary / the angle portion of the axis of rotation] (braking effects) can be obtained, and structure simplification of a suspension and a cost cut of a vehicle etc. can be attained by obtaining attenuation of the conventionally impossible hand of cut.

[Translation done.]